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MONTHLY LETTER OF THE BUREAU OF ENTOMOLOGY.

U. S. DEPARTMENT OF AGRICULTURE.

Number 20.

December, 1915.

DEATH OF PROFESSOR FRANCIS MARION WEBSTER.

The entomological service of the department has met with the most serious loss it has encountered since it reached bureau rank. Prof. F. M. Webster, Chief of the branch of Cereal and Forage Crop Insects, died in the Grant Hospital, Columbus, Ohio, Sunday morning, January 2nd, at 4 o'clock. He was taken suddenly ill with pneumonia on thursday morning, December 30th, was removed to the hospital on the afternoon of that day, and rapidly sank. He had rather a heavy cold during the early part of the week, but on Wednesday night attended the joint smoker of the Association of Economic Entomologists and the American Entomological Society, and appeared to be well and in excellent spirits. Professor Webster, as you all know, was one of the best known and most generally respected of the older group of economic entomologists in this country. He had a long and very productive career, and held a high place among those responsible for the present high standing of American economic entomology. During his thirteen years in the bureau he built up a notable organization and brought together a body of well trained and enthusiastic younger men who have been doing admirable work. While his loss will be most keenly felt, his plans were so well laid and the work at each of his field laboratories was so well organized that it can be carried on without interruption. The chiefs of these laboratories and working parties have been instructed to consult with the Chief of the Bureau in all matters of policy, while routine administrative matters in this branch will be handled by Mr. W. R. Walton as has been the case during Professor Webster's absences in the field. The question of the future head of this branch will not be decided at present.

THE PAN AMERICAN CONGRESS.

The Second Pan American Scientific Congress was held in Washington December 27, 1915, to January 8, 1916. One of its numerous sections was entitled "Conservation of Plant Life," and under this section there was one session in which papers were presented bearing upon the general subject of quarantine, in which entomologists were interested. Mr. Marlatt, Chairman of the Federal Horticultural Board, and the Chief of the Bureau took part in this discussion.

The following papers by members of the Bureau of Entomology were delivered:

"The International Need of a Sound Scientific Service in Economic Entomology in Each of the American Republics,"
by L. C. Howard, Chief, U. S. Bureau of Entomology.

"Pan-American Cooperation in Plant Quarantine," by C. L. Marlatt, Chairman, U. S. Federal Horticultural Board.

"Carlos Finlay on the House Mosquito of Havana," by Fredk. Knab.

"Discovery and Identification of the Stages of the Asexual Cycle of the Causative Organism of Peruvian Verruga," by C. H. T. Townsend

VISITORS TO THE BUREAU DURING DECEMBER.

The following were among the visitors at the Bureau during the month:

Wilmon Newell, Plant Commissioner of Florida.

J. T. Crawley, Director of the Cuban Experiment Station.

A. H. Rosenfeld, Director of the Tucuman Experiment Station.

C. T. Brues, Bussey Institution.

LIBRARY.

Miss Mabel Colcord, Librarian.

NEW BOOKS.

- British Museum. Catalogue of the Amatidae and Arctidae (Nolinae and Lithosiinae). By Sir George F. Hampson. London, 1914. 858p. illus. (Catalogue of the Lepidoptera Phalaenae, Supplement vol.1)
A separate volume of 41 plates, published in 1915, accompanies this.
- British Museum (Nat.Hist.) Dept.of zoology. The Syrphidae of the Ethiopian region... By Prof. Mario Bezzi. London, 1915. 146p. illus.
- Brunet, Raymond. Les maladies et insectes de la vigne... Paris (1900). 288p. illus. 12 col.pl.
- Darnell-Smith, G.P. Diseases of wheat. Fungus diseases. Sydney, N.S.Wales, 1915. 40p. illus. (New South Wales. Dept. of Agriculture. Farmers' Bulletin No. 102)
- Entomologia agraria. Manuale sugli insetti nocivi alle piante coltivate... Firenze, 1915. 483p. illus.
- Fabre, J.H. The hunting wasps... translated by Alexander Teixeira de Mattos. New York, 1915. 427p.

- Fracker, S.B. The classification of lepidopterous larvae, with ten plates... Urbana, Ill., 1915. 169p. (Illinois biological monographs, v.2, no.1)
- Garman, Harrison. The locust borer (*Cyrtene robiniae*) and other insect enemies of the black locust. Frankfort, Ky. 1915. 34p. 23pl. (In Second biennial report of the State forester of Kentucky)
- Malloch, J.R. The Chironomidae, or midges of Illinois... Urbana, 1915 (Bulletin of the Illinois state laboratory of natural history, v.10, article 6, p. 275-543. 21pl.
Some additional records of Chironomidae for Illinois and notes on other Illinois Diptera. Urbana, 1915. (Bulletin of the Illinois state laboratory of natural history v.11, article 4, p. 305-363, pl. LXXX-LXXXIV, Dec.1915)
- Mokrzhetzskii, S.A. Phylloxera; its condition as shown by recent investigations, the struggle against it, and the means of disinfecting horticultural material. (In Russian) Simferopol, 1915. 97p. illus.
- Morley, Claude. Revision of the Ichneumonidae. Part. 4. Tribes Joppides, Banchides and Alomyides. London, 1915. 167p. 1 col.pl.
- Notman, Howard. Coleoptera illustrata. v.1, no.1- Carabidae. Brooklyn, N.Y., 1915 50plates.
- Official register of the United States. Persons in the civil, military and naval service exclusive of the postal service. 1915- Directory. Compiled by the Department of Commerce, Bureau of the Census. Washington, 1915 910p.
- Wytsman, P. Genera insectorum fasc. 820. Bruxelles, 1915.
Contents: Horn, Walter. Coleoptera adephaga Fam. Carabidae. Subfam. Cincindelineae pt. 3. p. 209-486, plates 16-23.

BEE CULTURE.
E. F. Phillips, In Charge.

Dr. E. F. Phillips attended ten conventions of beekeepers in the Middle-West during November and December, these being arranged in a circuit for the convenience of those outside the various States who desired to attend. The meeting at Grand Rapids, Michigan, was the 50th annual convention of Michigan beekeepers.

The meeting of the Apiary Inspection section of the Association of Economic Entomologists on December 27th was well attended. Dr. T. J. Headlee of New Jersey is chairman of the section for the coming year. On December 28th a meeting of those engaged in teaching beekeeping was held as an adjunct to the Association meetings and a committee was appointed to draw up suggestions for a short course in beekeeping for agricultural colleges, it being the consensus of opinion that for the present such courses are most needed.

Mr. E. G. Carr has returned from his work in North Carolina where he was engaged in a survey of the present conditions and possibilities of beekeeping. The outlook in the State is most promising.

During the month work was continued with a colony of bees in a respiration calorimeter, the work being done in cooperation with the Home Economics Office of the States Relations Service. Mr. W. A. Parks was appointed temporarily to assist with this work.

CEREAL AND FORAGE INSECT INVESTIGATIONS.

Mr. C. N. Ainslie, of the Elk Point, South Dakota field laboratory is visiting Washington for the first time in seven years, for the purpose of consultation and preparation of manuscript. He will be in Washington about one month, returning to Elk Point by way of Charlottesville, Va. and Nashville, Tenn.

Mr. G. G. Ainslie of the Nashville, Tenn. field laboratory, visited Washington during the early portion of January for the purpose of consultation and preparation of manuscript.

Mr. T. D. Urbahns of the Pasadena, Cal., field laboratory, visited Washington during the month of January, for the first time in several years.

Mr. Donald J. Caffrey, in charge of the Maxwell, N. M., field station, is in Washington preparing a farmers' bulletin on the New Mexico range caterpillar.

Mr. C. M. Packard, recently attached to the staff at the Wellington, Kansas field laboratory, was in Washington during a portion of the month of January. Mr. Packard has in preparation a paper dealing with the biology of several parasites of the Hessian fly.

Messrs. C. W. Creel and A. H. Beyer, of the Forest Grove, Oregon field station and the Columbia, S. C., field station, respectively, were also in Washington during the month of January.

DECIDUOUS-FRUIT INSECT INVESTIGATIONS.
A. L. Quaintance, In Charge.

Mr. F. L. Simanton, who has been engaged in investigations of orchard insecticides and spraying machinery, with headquarters at Benton Harbor, Mich., has returned to Washington for the purpose of summarizing notes on the subject of his field investigations, preparation of manuscripts and library work.

Mr. H. G. Ingerson, who has been assisting Mr. Simanton at Benton Harbor, Mich., has also returned to Washington for the purpose of preparing notes on the subject of his field investigations and library work.

FOREST INSECT INVESTIGATIONS.
A. D. Hopkins, In Charge.

A recent inspection by Mr. T. E. Snyder of the experimental and demonstration control project in the White Top Purchase Area, Tenn., and Va., conducted by the Forest Service under the advice and instructions of Dr. A. D. Hopkins, shows that there is every indication from the relative number of black tops, brown tops and newly infested trees, that there is a marked decrease in the infestation and that a destructive invasion has been checked. The following summary gives the number of infested trees located and treated and the results.

SUMMARY

Feb. 1915.

Number infested trees - 2,612
1,712 within control area
900 outside " "

Number trees not treated - 1,000
100 within control area
900 outside " " (within 4 or 5 miles)

March 1915.

Number trees treated - 1,612
% treated - 61%

Nov. 1915.

Number infested trees - 102
102 within control area
? outside* " "

(*Reports indicate only scattering infestation.)

% reduction - 74.4%

The results of the preliminary examination in June 1915 and final inspection in November 1915, by Mr. Snyder, together with information supplied through the District Forester, shows that the treatment in March 1915, of about 60% of the infestation of the treated and adjacent

area was followed by about 74% reduction in the infestation of the entire area in November of the same year. This was a period of 8 months from completion of the control work, during which there was time for the development of three or four generations of the beetle from those left in the 1,000 infested trees that were untreated in March. The results show, that the control influence extended three or four miles beyond the area in which the control work was done.

This project is more the character of an experimental demonstration with the species of *Dendroctonus* involved, than an expedient in practice. Therefore, Dr. Hopkins has recommended that the experiment should be continued by leaving the present infestation without treatment of any kind, and that the area be watched by the local officials for new infestation during the summer of 1916, and thoroughly inspected by a Bureau official in November.

With reference to the note in the September number of the News Letter relating to the community demonstration project on methods of control of *Scolytus quadrispinosus* in hickory and *Agrilus bilineatus* in oak on Long Island under the specific direction of Dr. Hopkins, 942 infested hickories and 911 infested oaks, within an area of 1200 acres and involving six estates, were marked during the fall for treatment. At present the control work is being carried on by owners with special energy. Both the marking and control work are under the immediate supervision of the assistant in shade tree work, Mr. L. C. Griffith.

SOUTHERN FIELD CROP INSECT INVESTIGATIONS.
W. D. Hunter, In Charge.

W. D. Pierce will be on leave until January 24.

A. H. Jennings is on furlough for the months of December and January on account of ill health.

W. V. King will attend a conference at Washington on January 3.

T. C. Barber's appointment was extended by presidential exception. This action was necessary on account of the fact that Mr. Barber has not completed his citizenship.

S. E. Crumb spent part of the month in Washington.

J. U. Gilmore and J. D. Smith were in Washington during the month but were both compelled to return to their homes on account of illness.

TROPICAL AND SUBTROPICAL INSECT INVESTIGATIONS.
C. L. Marlatt, In Charge.

Mr. J. R. Horton, in field charge of citrus insect investigations in Louisiana, spent the last week of December in Washington, to consult on the future of the Louisiana work. The destruction of the recent great storm referred to in an earlier number of this news letter was such, both of the experimental work under way, and the orchards themselves, as to make it impracticable to continue the experimental work at New Orleans. Fortunately, the main object of this investigation, namely, the study of the Argentine ant in relation to citrus orchards, is substantially completed and will soon be worked up for publication. Supplementing the work at New Orleans, Mr. Horton will be commissioned to study the Argentine ant in Southern California for a few months, in cooperation with Mr. Woglum, to determine whether the relation of the ant to citrus trees and to citrus insects is the same under California conditions as it is in the moister Mississippi delta section.

Messrs. Back and Pemberton are rounding up the research work in Hawaii, in relation to the Mediterranean fruit fly, and some preliminary results of this investigation have been published from time to time in the Journal of Agricultural Research of this Department. Messrs. Back and Pemberton have recently submitted for publication in the Journal of Economic Entomology a paper giving the parasitism among the larvae of the Mediterranean fruit fly in Hawaii during the year 1915.

Mr. Woglum reports gratifying results in his experimental work in control of the mealy bug, and hopes to have this investigation in shape for the submission of a comprehensive report early this year.

Mr. Yothers is undertaking a state-wide inquiry in Florida, to determine the exact amount of benefit derived from proper spray-control methods against the white fly and other citrus pests in that State, more particularly as it affects the increased percentage of first-grade fruit.

The Federal Horticultural Board, in which the Bureau is directly and cooperatively interested, reports that two huge fumigating plants are now being erected in Boston for the fumigation of imported lint cotton. One of these plants is capitalized at half a million dollars, and the other one is equally large. Preparations for the erection of additional plants are under way at New York, and similar smaller plants will doubtless be erected at San Francisco, and perhaps other principal entry ports. These cotton fumigating plants present by far larger agencies for insect destruction than have ever hitherto been contemplated, and they illustrate the possibility of a new method of insect control on a large scale, which will apply equally well to nursery stock, household goods, or any other material requiring disinfection.

TRUCK CROP AND STORED PRODUCT INSECT INVESTIGATIONS.
F. H. Chittenden, In Charge.

Referring to the same species mentioned in the October number of the Bureau letter, page 6, it has been observed of the cabbage looper (*Autographa brassicae*) that it has different habits according to the region in which it occurs, due doubtless to climate, heat and cold, and environment. This species can be easily controlled in Tidewater, but it is more difficult to destroy in the Atlantic region of the north. There is no evidence that when this species occurs in Tidewater Virginia that it can not be controlled by almost any spray since the conditions there are quite favorable for infection by a bacterial disease. The combination of the disease and poisons kills a high percentage.

An article has recently been published by the Virginia Truck Experiment Station on the control of injurious aphides or plant-lice by ladybirds in Tidewater Virginia. This matter was first suggested and begun by the writer in 1909, first on a small scale and afterwards on a larger scale. It has been practically completed by Mr. D. E. Fink, the author of the article, this winter. It appears to be a complete success as regards the spinach aphid and aphides in general, practically no trouble has been experienced over large areas. The species are the convergent ladybird (*Hippodamia convergens*), and the spotted ladybird (*Megilla maculata*). The convergent ladybird is able to adapt itself to almost any plants where aphides are present and apparently it naturally inhabits all of our States although it is not abundant or so active in the extreme north. There it may be replaced by some other species but this has not been thoroughly tested. Prior to the introduction of these ladybirds the spinach crop--which is a very important one in Virginia--suffered severely, and growers were abandoning its culture as no direct remedies were discovered after years of study. Because of the close proximity of the spinach to the ground under-spraying was practically useless on a large scale.

